VueScan User's Guide

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Introduction

Overview

VueScan is an inexpensive program that works with most scanners to produce high−quality scans that have excellent color fidelity. It takes advantage of the advanced hardware capabilities of most scanners on the market today, and helps you do batch scanning while at the same time producing color−balanced and cropped images.

Basic Use of VueScan

- Run VueScan
- Insert image into scanner
- Set "Device|Media type"
- Press "Preview" button
- Adjust crop box with left mouse button
- Press "Scan" button

If the colors don't look quite right in the preview, try clicking with the right mouse button (with control key on Mac OS) on an area of the image that should be gray.

To reset to the automatic color balance setting, double−click on the image with the right mouse button (with control key on Mac OS).

If the lighting in the scene is unusual (i.e. at sunset or with stage lighting), try setting "Color|Color balance" to "Neutral".

Using VueScan as Copier

- Run VueScan
- Set "Device|Option types" to "Intermediate"
- Set "Device|Auto save" to "None"
- Set "Device|Auto print" to "Scan"
- Set "Device|Media type"
- Insert image into scanner
- Press "Preview" button
- Adjust crop box with left mouse button
- Press "Scan" button
- Repeat from step 6

Basic Elements of User Interface

VueScan lets you change options in the tabbed panels on the left side of the window and displays images and histograms on the right side of the window. The bottom left corner of the window shows the dimensions of the image that will be written if you press the Scan button or the Save button. Other commands are available in the menu bar, and the most commonly used commands are available as buttons at the bottom of the window.

VueScan has a large number of options, and you can use "Device|Option types" to control whether basic, intermediate or advanced options are displayed.

You can adjust numeric options by typing a number into a box, moving the slider, or clicking the up/down arrow to the right of the option. You can change file name options by either typing a file name into a box or pressing the button to the right of the file name to browse to the file name.

You can adjust cropping of images by first pressing the preview button, then dragging the edges of the crop box to the desired position or dragging the whole box to a new position. You can also change the focus position by using the mouse to move the small animated box that indicates the focus position, and can reset the automatic cropping by double−clicking on the image.

The preview window is primarily used to show the cropping that the automatic cropping has selected and to let you change this cropping if necessary. It's also used to give you a rough idea of what the color and contrast will look like in the final scan. The scan window shows the cropped image that can be written to a file or printed.

Adjusting Color Balance

You can adjust the color balance of images by clicking on a neutral (gray) area of the image with the right mouse button (or clicking while holding down the control key on Mac OS). You can reset the color balance to automatic white balance by double−clicking on the image with the right mouse button (holding down the control key on Mac OS).

You can display the color of the pixel underneath the mouse cursor by moving the mouse over an image. You can also display the position of any point in the image by moving the mouse in the image while holding down the Control key.

Refreshing Display

Whenever you change an option that affects the preview or scan, there is a small delay and then the preview or scan is refreshed. You can disable this by setting "Prefs|Refresh delay" to 0, and then manually refresh the display when needed by using the "Image|Refresh" command.

You can also see the effects of changes to an image by clicking on the image while holding down the shift key. This lets you change an option and then clicking on the image with the shift key to toggle between the old image and the new image.

You can see the effects of multiple option changes by setting "Prefs|Refresh delay" to 0, refreshing the display manually, changing options, refreshing the display again, and then clicking on the image while holding down the shift key to see the changes.

Batch scanning

VueScan normally previews or scans a single frame at a time. If you want to do multiple frames at a time, use the "Device|Batch scan" option.

There are two types of scanners that can do batch scanning: scanners that can randomly address individual images (like movable film holders or a flatbed set up for multiple frames in a grid) and scanners that can eject the current image and insert the next image (like the Nikon SF−200 slide feeder or the Epson Automatic Document Feeder). The former type of scanner can do batch scanning with the "Device|Batch scan" option

and the latter can do batch scanning by either pressing "Eject" to feed manually or setting "Device|Auto eject" to "Scan" and "Device|Auto scan" to "Scan device".

You can significantly speed up batch scanning on some scanners by setting two options so the preview won't be done when you do a scan. To do this, set the cropping for all the frames, then clear "Crop|Crop auto position". In addition, if the "Device|Lock exposure" option is displayed, turn it on and set "Device|RGB exposure" to either "1" or a value greater than one that won't overexpose any of the images.

Default options

VueScan does automatic cropping and automatic white balance, and then lets you use an external image viewer to tweak the cropping (if you desire) and tweak the color balance (if necessary). A lot of effort has been put into VueScan to make it accurately crop and white−balance scans, so the amount of manual adjustment needed is minimal − something you'll appreciate when batch scanning large numbers of images.

VueScan's user interface has a large number of options, but the only thing you normally need to do is set the frame number to scan (using "Device|Frame number") and then press the "Scan" button. If you've changed a lot of options and things aren't working right, just reset all the options to their default values with the "File|Default options" command.

How VueScan Works

There are two types of scans − a preview and a scan. The main difference between the preview and the scan is that no files are written when doing a preview and a larger area is scanned for the preview (so you can crop it).

A scan involves reading the raw scan data (from one of 3 sources), processing the raw scan data to get accurate colors, and writing the processed image data (to up to 4 destinations).

The raw scan data can come from one of:

- Scanner ("Preview" or "Scan" buttons)
- Memory buffer from previous scan ("Save" button)
- Raw scan file from previous scan ("Device|Scan from" "Disk")

The processed image data for a preview goes to the Preview tab. The processed image data for a scan can go to any combination of:

- TIFF file ("Files|Save TIFF file")
- JPEG file ("Files|Save JPEG file")
- index file ("Files|Save index file")
- raw file ("Files|Save raw file")

Note that there is a separate memory buffer for each frame, and you can change between frames without doing another preview or scan. However, the total amount of memory that can be used for this is limited by "Prefs|Preview mem (MB)" and "Prefs|Scan mem (MB)". If more memory is needed, the oldest memory buffers are freed until there is enough memory for a new preview or scan.

Using Raw Scan Files

One of the most powerful features of VueScan is that you can save the raw scan data in a file (using "Files|Save raw file") when scanning. These raw scan files can then be reprocessed later without needing to re−scan the actual media again. You shouldn't ever need to scan the same physical image twice.

The raw scan files are raw data straight from the CCD in the scanner, without any sort of color processing or modification. None of the options in the Filter or Color tabs affect the raw scan files in any way (except that when "Files|Raw save with" is set to "Save", the raw file has had rotation, mirroring, infrared cleaning and grain reduction applied).

You only need to save raw scan files if you foresee a need to reprocess the image in a later session. In any case, VueScan always keeps the raw data from the most recent scan in memory, so you can always reprocess it without needing to rescan the image. The only time you'll need to rescan the image is if you want to change the cropping, scan at a higher resolution, or if you want to manually change the exposure or focus.

Using Color Negative Film

Note that the images produced by VueScan from scanned negatives may vary in intensity and contrast from the prints you get back from a photofinisher. If you look closely at the prints, you'll probably see that the detail in the highlights of the image have been lost, and the detail in the dark parts of images can't be seen. VueScan tries to preserve the detail in the dark and light parts of images, and you can control how much detail in the dark and light parts is preserved by experimenting with the "Color|White point (%)" option. If you want to more closely duplicate the loss of detail in dark and light parts of images that you get when getting prints from a photofinisher, try setting "Color|White point (%)" and "Color|Black point (%)" to "5".

Adjusting Color Balance

One of the most important characteristics of an image is the color balance − making neutral colors look neutral and making other colors look lifelike. VueScan's default setting for "Color|Color balance" ("White balance") is able to automatically do this for the vast majority of scans.

Sometimes VueScan's white balance algorithm doesn't cope well with unusual lighting. For instance, the light from a sunset will be adjusted so that the ground appears gray instead of orange and scans of flowers will appear less intense than they should.

The best approach to solving this is to change "Color|Color balance" from "White balance" to "Neutral". In addition, if you're scanning slides, make sure you've set "Device|Media type" to "Image".

When using the "Neutral" setting, it's possible to manually set the value of the neutral color. This is somewhat counter−intuitive, since decreasing the red neutral color (for instance) increases the overall red color of the image.

It's much simpler to use the right mouse button to click on part of an image that contains a neutral (i.e. shade of gray) color. This will update the color balance of the image so that this point is a shade of gray. You can reset the color balance to "White balance" by double−clicking on the image with the right mouse button.

On Mac OS, use the control key along with the mouse button to set the neutral color (single−click) or reset the color balance to "White balance (double−click).

Batch Scanning

If you're scanning many images in one session, the most efficient way to do this is to scan each image once and save the raw CCD data in a file. Once the raw CCD data is stored in a file, you can re−process the scans in a variety of ways without needing to re−insert the image into the scanner. This minimizes the opportunities for the film to get dusty, minimizes film handling, and is the fastest way to re−process all the scans if you decide you want to use different options for the scans.

To do batch scanning, you first need to set up the options in the "Device" tab for the scanner and media type you're using. First, set "Device|Option types" to "Advanced" and use "File|Default options" to set up default options. Then set "Crop|Region" to "Auto", set "Crop|Crop size" to "Maximum", set "Crop|Y images" to 1, and in the "Files" tab un−check all the options except for "Files|Save raw file" (which should be on).

When you scan each image, a file named scan0001.tif, scan0002.tif, etc. will be created. You can also change the folder and file names by changing the "Files|Raw file name" option. To re−process these raw files, set the "Device|Scan from" option to "Disk", set "Device|Disk file name" to point to the starting file in the series (normally scan0001.tif), set "Device|Mode" to the type of scanner that the files came from, use the "File|Default options" command to set all the other options to their default values, then set up the other options as if you were scanning from the scanner instead of a file.

Set "Device|Batch scan" to "All" to scan all files, or set it to "List" and manually set the frame numbers. For instance, if you set this to "1−3,5,7", then scan0001.tif, scan0002.tif, scan0003.tif, scan0005.tif and scan0007.tif will be processed when you press the "Scan" button.

You may also want to follow the procedure in the "Advanced Workflow Suggestions" section of this User's Guide for locking the exposure and film base color for the whole roll of film. This will result in scans that will have the best quality.

Advanced Workflow Suggestions

If you're scanning many frames from the same roll of film, the following procedure will optimally set the CCD exposure and film base color (i.e. mask color):

```
1) Set "Device|Option types" to "Advanced"
2) Set "Device|Media type"
3) Insert film with most transparent area
4) If "Device|Lock exposure" visible
   4a) Clear "Device|Lock exposure"
5) Press "Preview" button
6) Adjust cropping if necessary
7) If "Device|Lock exposure" visible
   7a) Set "Device|Lock exposure"
   7b) Press "Preview" button
8) If "Device|Lock film base color" visible
   8a) Set "Device|Lock film base color"
```

The unexposed leader of negative film is a good candidate for "most transparent area", if available. Likewise, the fully exposed part of the leader of positive slide film is ideal if available. If neither is available, seek a frame that has an area that would print as pure black for negative, or pure white for slides, then adjust cropping to consider that part of the frame. Keep in mind that the exposure calculation is made based on the cropped area of the frame, so you can adjust the crop area in this procedure to a section of a frame (or for negatives the unexposed space between frames).

Regardless of the lighting conditions, shutter speed and aperture of each frame in the roll, you should use these fixed values for exposure and film base color for scanning all frames on the roll of film.

Once you have the exposure and film base color fixed, you can scan the whole roll of film with these values. If you're using the same lighting for all the frames on the roll (or a subset of the frames), you can lock the color balance by scanning the brightest frame in the series and then setting the "Device|Lock image colors" option. This will lock the black and white points for the scene, and will produce consistent colors for all the frames in the series. This is also useful if you're scanning panoramic scenes that have all been taken with the same lighting, shutter speed and aperture or if you're scanning a series of studio shots taken with the same lighting, shutter speed and aperture.

Another thing you can do to optimize workflow is to scan to raw files and later experiment with color correction. Make sure you first set "Device|Lock exposure" before scanning a roll of film.

If you're saving raw scan files, you probably will want to turn off the "Files|Save TIFF file" and "Files|Save JPEG file" options. You may also want to capture the entire scan region instead of the auto−cropped region by clearing "Crop|Crop auto position" and setting "Crop|Crop size" to "Maximum".

If you set the "Device|Lock exposure" option and clear "Crop|Crop auto position", then the "Scan" button won't first do a preview scan. This can save time when batch scanning.

How VueScan Works

There are two different things VueScan does − scanning an image and processing the raw data from the scanner to produce a color−corrected image. These two things are done in steps, and it's useful to understand each of the things that are done when scanning and when processing.

The "Preview" and "Scan" buttons do both the scanning and processing steps. The "Save" button starts from the raw CCD data in memory and only the processing step is done.

Scanning

Scanning an image involves optionally focusing the scanner, setting up the exposure time for the CCD, area to be scanned, number of bits per sample, number of samples per pixel, scan resolution, and then reading the raw CCD data into a memory buffer in VueScan.

If single−pass multi−scanning is enabled, each line of data from the CCD is read multiple times and combined (averaged) while being stored in the memory buffer. If multi−pass multi−scanning is enabled, the whole scan area is read multiple times and combined (averaged) in the memory buffer.

There is no scaling or color correction of the raw CCD data in the scanning step. Some scanners either always or sometimes convert 10−bit or 12−bit CCD data to 8 bits before transferring it to VueScan, and then VueScan converts it back to 10−bit or 12−bit CCD data. This is done using the same gamma correction table specified by the sRGB standard.

When the "Device|Scan from" option is set to "Disk", the raw CCD data is read from a TIFF or JPEG file and stored in the memory buffer, just as if it had been read directly from a scanner. The "Device|Mode" option is used to indicate the type of scanner that the raw CCD data came from (this helps with color correction in the processing step).

When the preview image is scanned, the exposure time is fixed at 1.0, the area to be scanned is the full scan region, and the scan resolution is set to a value that produces approximately 1 million pixels.

When the full scan is done, the exposure time is either computed from the preview or from the manual setting and the area to be scanned is a subset of the scan region (determined by the cropping). If the scan resolution is "Auto", a scan resolution is chosen that produces approximately 4 million pixels.

When the preview or scan is performed, the raw data is put into a memory buffer. If the "Files|Save raw file" option is enabled and "Files|Raw save with" is set to "Preview" or "Scan", the raw data is written to a TIFF file at the same time as it's put into the memory buffer.

Processing

The processing steps are done for both the preview scan and the full scan.

The first step is using the infrared data to do a first attempt at dust removal (if enabled). This reads the whole image from the memory buffer to characterize the relationship between the color channels and the infrared channel. Then it reads each line once, correcting it for dust spots and passing each line to the subsequent steps for further processing.

The next step is applying the cleaning filter. This filter tries to remove dust spots by using the infrared data to identify and remove dust spots and filling in these spots with image data just outside the dust spots. This filter also reduces the appearance of film grain using a sigma filter.

Note: infrared data is only available from scanners that have an IR channel. If the channel is not present the options will be skipped and not be available.

If saving files, the "Files|Save raw file" option is enabled and "Files|Raw save with" is set to "Save", the data at this stage is written to a TIFF file. This raw data can subsequently be re−processed by setting the "Device|Scan from" option to "Disk". Note that the data from the IR channel, if present, is saved as part of this raw file.

Next, the restore colors and restore fading filters are applied (if enabled). This reads the whole image once to detect the original colors of the image and then reads each line once to correct for color shifts and dye fading.

The next step is performing corrections for film media. This reads the whole image once to compute the intensity of the film base, and then reads each line, corrects it based on film characteristics, and passes each line to the subsequent steps for further processing.

At this point sharpening is performed. A simple 3x3 filter is used to increase the sharpness of the image.

The last step is color correction. The whole image is read once, and the options from the Color tab are used to convert to the final colors of the saved images. The inputs to this step are 16−bit linear light samples, and the outputs from this step are gamma corrected samples.

Once the image data has been corrected, the preview image data is displayed in the Preview tab or the scan image data is optionally displayed in the Scan tab or written to a TIFF file, a JPEG file, or an index file.

Scanning Color Negative Film

Color negative film is able to capture a much wider range of intensities than slide film, and this creates a problem when scanning negative film.

Slide film maps a density range of 0:2.7 to an intensity range of 1:500, but negative film maps a smaller density range of 0:2.4 to a larger intensity range of 1:4000.

Imagine taking a picture of a typical outdoor scene with a bright blue sky with fluffy clouds along with a person standing in a shadow under a tree. Further, imagine taking this picture with both slide film and negative film.

When taking this picture with slide film, the photographer has to set the exposure to either capture the details of the sky and clouds, or set the exposure to capture the details of the person standing in the shadow under the tree. Once the picture is taken of one of the two intensity ranges, there's no way to get back the other intensity range after developing the film. However, when taking this picture with a typical consumer camera with negative film, the camera will usually set the exposure so that both the details in the clouds and in the shadows are captured on the film.

The decision of whether to capture the intensity range of the clouds or the person in the shadows is made by the photographer when using slide film, but it's usually made by a computer in the film minilab when printing the negative. Most minilabs will print this type of scene with details in the shadows and the sky clipped to white without any cloud or sky detail.

One way to solve this problem is to manipulate the brightness of the image using the "Color|Brightness" or "Color|White point (%)" option to manipulate the negative image so that both the bright and dark parts of the image have detail when scanned.

Scanning Black/White Negative Film

If you're scanning black/white negative film, first check to see if the film looks gray or orange to the naked eye. If it looks gray, set "Device|Media type" to "B/W negative" and if it looks orange, set it to "Color negative". Then go to the Color tab and choose a Black/White film type. If you can't find a film type that exactly matches the film you're using, experiment with the Kodak T−Max settings.

On most scanners, setting "Device|Media type" to "Color negative" will increase the green exposure time by 2.5x and the blue exposure time by 3.5x. This results in adjusting for the green and blue absorption by the orange mask of the film. If the film doesn't have an orange mask, then using "Color negative" will result in a raw scan file that looks very, very cyan.

Maximizing Image Quality

After you've decided on the resolution of your finished image (or alternatively the pixel dimensions of your finished image), how do you maximize the image quality? There's one thing you can do which involves taking longer to scan but getting more raw data for each pixel in the finished image.

The basic idea is scanning each pixel more than once and averaging these pixels. Each doubling of the number of pixels increases the effective number of useful bits of data by one. For instance, if you have a 10−bit scanner like the Nikon LS−30 and you read the CCD 4 times at each pixel position, you get effectively 12 bits of useful image data.

There are several ways of getting multiple image samples. The first of these is single−pass multi−scanning. Some scanners are capable of reading each pixel position multiple times before advancing the scan head to a new position. The film scanners that can do single−pass multi−scanning are the Minolta QuickScan 35, Scan Dual, Scan Multi, Scan Multi Pro, Scan Speed, Scan Elite, and Nikon LS−2000/LS−4000/LS−8000. The second technique is multi−pass multi−scanning, which most scanners are capable of (however, some can't accurately reposition each scan pass, so this sometimes doesn't work well).

Another useful way of getting multiple image samples is to scan at a higher resolution and then average adjacent blocks of pixels. For instance, scanning at 2700 dpi and averaging every 2x2 block of pixels will result in a higher−quality 1350 dpi scan than just scanning at 1350 dpi. Scanning at 1350 dpi in this case will throw away every other pixel and every other scan line, while scanning at 2700 dpi and setting "Files|TIFF size reduction" to 2 will result in averaging 2x2 blocks of pixels and increasing the number of effective bits of resolution by 2 bits.

Note that multi−scanning is the only way to increase the quality at the highest resolution, and that using "Files|TIFF size reduction" is a better way of producing quality scans at lower resolutions.

File Formats

VueScan reads raw sensor data from scanners and writes this data to a TIFF file for subsequent processing. The final cropped data can be stored in a TIFF file and/or a JPEG file. Index prints are always stored in a standard Windows BMP file.

The raw and cropped TIFF files can have 6 different formats, each with a different number of samples per pixel and bits per sample. A grayscale image has 1 sample per pixel, a normal color image has 3 samples per pixel (red, green, blue), and scans from a scanner with an infrared channel can have 4 samples per pixel (red, green, blue, infrared). VueScan internally keeps all samples in 16−bit linear format, even when a scanner only supports 10−bit samples, but to minimize the disk usage, various TIFF file formats are supported:

```
 1 bit B/W      1 bit   per pixel 1 sample  per pixel  1 bit  per sample
 8 bit Gray     1 byte  per pixel 1 sample  per pixel  8 bits per sample
16 bit Gray     2 bytes per pixel 1 sample  per pixel 16 bits per sample
24 bit RGB      3 bytes per pixel 3 samples per pixel  8 bits per sample
48 bit RGB      6 bytes per pixel 3 samples per pixel 16 bits per sample
64 bit RGBI     8 bytes per pixel 4 samples per pixel 16 bits per sample
16 bit Infrared 2 bytes per pixel 1 sample  per pixel 16 bits per sample
```

If you want to process the full bit depth of an image in Photoshop(TM), use the 48 bit RGB setting for the Crop TIFF file. Note that some other image editing tools cannot process 48 bit TIFF files; 24 bit is more widely compatible.

Note that the raw scan files are stored in linear format when using more than 8 bits per sample, and stored in gamma 2.2 format when using only 8 bits per sample. The saved TIFF files are always gamma corrected according to color space used (1.8 for Apple RGB, ColorMatch RGB and ProPhoto RGB and 2.2 for all other color spaces). Note that the raw scan files stored in linear format will look dark when viewed. This is normal.

Note that both the scan TIFF file and the crop TIFF file can be compressed. VueScan uses CCITT Group−IV compression for 1−bit files, and LZW compression otherwise. This is a bit slower to write, but takes 40% less disk space on average. The size of the JPEG files can be controlled with the JPEG quality option, with useful values ranging from 75 (very compressed, medium quality) to 95 (not compressed very much, high quality).

Helpful Tips and Tricks

Scan multiple photos, slides, film strips at once on a flatbed

VueScan provides a feature that allows you to scan multiple photos, slides or film strips in a single pass of your scanner. Lay the prints or slides on the scanner bed in a grid, edge to edge, then use the "Crop|X/Y images" and "Crop|X/Y spacing" options. From a single scan, VueScan will produce multiple files, all cropped and color balanced automatically.

Scan images only once

If you want to try several different ways of scanning a negative or slide, you don't need to physically scan it more than once. The raw scan data for both previews and scans are kept in memory, and can be reprocessed using the "Save" button.

Use default options

The default options have been designed to work well on most images and most systems. If you're having problems scanning, reset all the options to their default values by choosing the "File|Default options" command. If this works, try changing one option at a time and re−doing the scan.

Use TIFF if archiving or editing files from VueScan

Each time an image is saved as JPEG, some information about the image is lost, even at the highest quality (and lowest compression) levels. This effect is compounded if you save a file, then make some changes and save again. So unless you are certain you will never need to modify an image, JPEG is an undesirable choice.

Instead, use TIFF, which always stores all of the data of an image without any loss, even when compressed. TIFF is therefore a good choice for archiving of files, and for subsequent image operations in tools like Photoshop(TM). The downside of TIFF is that the files are larger than JPEG, even when compressed, and especially at high resolution offered by today's scanners, this can result in very large files.

Consider burning TIFF files to CD−R files for permanent archival.

Reduce "Crop|Region" on flatbed scanners to improve scan times

Much of the time needed to perform a scan is in moving the scan head (for flatbed scanners) or the media holder (for film scanners).

These two tips will help reduce scan times for flatbed scanning.

The scanner will only scan the area specified in "Crop|Region". If you are scanning a single photo or strip of film scanner, set this value to include only area required to cover your media.

Also, orient media in landscape on the scanner bed. The stepper motor that moves the scanner head is usually the limiting factor; the less it needs to move, the more quickly the scan will complete.

Scanning text from paper for use with OCR software

To get the cleanest scans of characters when scanning printed documents on a flatbed scanner, set "Device|Media type" to "Text". This will ensure the result is black and white, which will reduce noise.

Typically OCR packages expect TIFF file format; set "Files|Save TIFF file".

You may also find the "Files|TIFF multi page" option useful, as multiple pages will then be saved in a single file. Note that you need to remove the "+" from the "Files|TIFF file name" option to use this.

Turn off rotation if scanning with Low Memory

If you save images that are significantly larger than the amount of memory on your computer, set the rotation to None. This will make the cropping go much faster.

Film types

VueScan contains information about the color sensitivity of many different types of film. Use the table below to identify types of film from the labels on the film and the colors of the stripes over the sprocket holes.

If you're using film types that aren't in this table, particularly some of the newer Fuji film types, try experimenting with the Kodak Gold and Kodak Advantix settings − these seem to work pretty well.

Note that films such as Kodak Gold have different types of emulsions indicated by the Generation (Gen) code on the film. You can usually see this on the film itself in the writing on the film near the sprocket holes.

Vendor	Brand Name	Film Type	Label on Film/Stripe1Color/Stripe2Color
3M	Scotch HR	200 Gen 2	3M CP−200/NONE/BLUE DOTS
3M	Scotch HR	400 Gen 2	3M CP−400/BLUE DOTS/NONE
3M	ScotchColor	AT 100	3M CP 100 3 18−7/GREEN DOTS/NONE
3M	ScotchColor	AT 200	3M CP 200 3 18−9/GREEN DOTS/NONE
3M	ScotchColor	ATG−1 200	3M ELP 200 66−5/NONE/NONE
3M	ScotchColor	ATG 400/EXL 400	3M F CP400 66−10/RED DOTS/NONE
3M	ScotchColor	HR2 400	3M CP 400 18−8/RED DOTS/NONE
AGFA	AGFACOLOR	OPTIMA 125	AGFA OPTIMA 125/GREEN SQUARE/NONE
AGFA	AGFACOLOR	OPTIMA 200	AGFA OPTIMA 200/GRN SQUARES/NONE
AGFA	AGFACOLOR	PORTRAIT 160	AGFA PORTRAIT 160/GREEN SQUARE/NONE
AGFA	AGFACOLOR	Ultra 50	AGFA ULTRA 50 Triangles/NONE/GREEN
AGFA	AGFACOLOR	XRG 100	AGFA XRG 100/GREEN SQUARE/NONE
AGFA	AGFACOLOR	XRG/XRS 200	AFGA XRG 200 Pairs of Squares/GREEN/NONE
AGFA	AGFACOLOR	XRG/XRS 400	AFGA XRG/XRS 400 Pairs of Squares/GREEN/NONE
AGFA	AGFACOLOR	XRS 1000 Gen 2	AGFA XRS 100 Triplets of Squares/GREEN/NONE
AGFA	AGFACOLOR	XRS 400 Gen 1	XRS 400 Gen 1/MAG SQRS/NONE
AGFA	AGFACOLOR	XRS 400 Gen 2	XRS 400 Gen 2/MAG SQRS/NONE
AGFA	AGFACOLOR	XRS/XRC 100	AGFA XRS 100/GREEN SQ/NONE
FUJI	NHG	400	FUJI NHG/NONE/NONE
FUJI	NPS	160S (PRO)	FUJI NPS 160/NONE/NONE
FUJI	Reala	100 (JAPAN)	FUJI REALA/GREEN/NONE
FUJI	Reala	100 Gen 1	
FUJI	Reala	100 Gen 2	FUJI REALA CS−2/BLUE/GREEN
FUJI	SHR	400 Gen 2	FUJI 400/NONE/NONE
FUJI	Super G	100	FUJI G−100/NONE/GREEN DASHES
FUJI	Super G	200	FUJI G−200/GREEN DASHES/GREEN DASHES
FUJI	Super G	400 Gen 1	
FUJI	Super G	400 Gen 2	FUJI G−400/NONE/GREEN DASHES
FUJI	Super HG	100	FUJI HG100 CN−2/GREEN/GREEN
FUJI	Super HG	100 Gen 2	HG 100/NONE/GREEN
FUJI	Super HG	1600 Gen 1	FUJI HG1600 CU1/BLUE/NONE
FUJI	Super HG	200	FUJI HG200 CA−1/NONE/GREEN
FUJI	Super HG	400	FUJI HG400 CH−1/NONE/GREEN
FUJI	Super HR	100 Gen 1	FUJI 100/GREEN/NONE
FUJI	Super HR	100 Gen 2	FUJI 100/GREEN/NONE
FUJI	Super HR	1600 Gen 2	FUJI 1600/NONE/BLUE
FUJI	Super HR	200 Gen 1	FUJI 200/GREEN/NONE
FUJI	Super HR	200 Gen 2	FUJI 200/NONE/NONE
FUJI	Super HR	400 Gen 1	FUJI 400/GREEN/NONE
ILFORD	XP2	400	ILFORD XP2/NONE/NONE
KODAK	ADVANTiX	100−2	ADVANTIX 100−2 KODAK 100−2/NONE/ NONE

```
KODAK    ADVANTiX       100                ADVANTiX 100 KODAK 100/NONE/NONE
KODAK    ADVANTiX       200-2              ADVANTIX 200-2 KODAK 200-2/NONE/NONE
KODAK    ADVANTiX       200                ADVANTiX 200 KODAK 200/NONE/NONE
KODAK    ADVANTiX       200                ADVANTiX 200 KODAK 200/NONE/NONE
KODAK    ADVANTiX       400                ADVANTiX 400 KODAK 400/NONE/NONE
KODAK    ADVANTiX       Black White + 400 ADVANTIX BW KODAK BW/NONE/NONE
KODAK    Commercial     200                COMMERCIAL 200-2 CO 200-2 KODAK/NONE/NONE
KODAK    EKTACOLOR      GOLD 160  GPF      KODAK GPF 5124/GREEN/GREEN
KODAK    EKTACOLOR      GOLD 400 Prof EGP-4 KODAK 5087 [or] 6087 EGP-4/NONE/NONE
KODAK    EKTACOLOR      GOLD II 400  EGP-4  KODAK 5087 [or] 6087 EGP-4/NONE/NONE
KODAK    EKTACOLOR      Gold II 400 Prof    Kodak 5087 EGP/NONE/NONE
KODAK    EKTACOLOR      PRO GOLD 160  GPX   KODAK GPX KODAK FILM/NONE/NONE
KODAK    EKTAPRESS      1600 Gen 1      PPC KODAK 5030 PPC/NONE/NONE
KODAK    EKTAPRESS      GOLD 100 Gen 1  PPA KODAK 5115 PPA/NONE/NONE
KODAK    EKTAPRESS      GOLD 400      PPB-3 KODAK 5113 PPB/NONE/NONE
KODAK    EKTAPRESS      GOLD II 100 Prof    KODAK 5115 PJA-1/NONE/NONE
KODAK    EKTAPRESS      GOLD II 1600 Prof   KODAK 5030 PJC-1/NONE/NONE
KODAK    EKTAPRESS      GOLD II 400 Prof G5 KODAK 5113 PJB-2/NONE/NONE
KODAK    EKTAPRESS      GOLD II Multspd PJM KODAK PJM/NONE/NONE
KODAK    EKTAPRESS      Multspd Prof PJM-2  KODAK PJM-2/NONE/NONE
KODAK    EKTAPRESS      PJ100               KODAK PJ100/NONE/NONE
KODAK    EKTAPRESS      PJ400               KODAK PJ400/NONE/NONE
KODAK    EKTAPRESS      PJ800-2             KODAK PJ800-2/NONE/NONE
KODAK    EKTAPRESS      PJ800               KODAK PJ800/NONE/NONE
KODAK    EKTAPRESS      PLUS 100 Prof PJA-1 KODAK 5115 PJA-1/NONE/NONE
KODAK    EKTAPRESS      PLUS 1600 Pro PJC-1 KODAK 5030 PJC-1/NONE/NONE
KODAK    EKTAPRESS      PLUS 200 Prof       KODAK 5016 PJZ/NONE/NONE
KODAK    EKTAPRESS      PLUS 400 Prof PJB-2 KODAK 5113 PJB-2/NONE/NONE
KODAK    EKTAR          100 Gen 1           EKTAR 100-1|KODAK 3101/MAGENTA/2-MAGENTA
KODAK    EKTAR          100 Gen 2           KODAK CX 100-2|EKTAR 100-2/2 MAGENTA/MAGENTA
KODAK    EKTAR          100 Gen 3  CX       EKTAR 100-3 KODAK CX 100-3/NONE/NONE
KODAK    EKTAR          100 Gen 3  SY       EKTAR 100-3 KODAK SY 100-3/NONE/NONE
KODAK    EKTAR          1000 Gen 1          KODAK 5110|EKTAR 1000-1/NONE/2-GREEN
KODAK    EKTAR          1000 Gen 2          EKTAR 1000-2 KODAK 1000-2/NONE/NONE
KODAK    EKTAR          125 Gen 1           KODAK 5101|EKTAR 125-1/NONE/2-MAGENTA
KODAK    EKTAR          25                  KODAK 25 EKTAR 25/NONE/2-BLUE
KODAK    EKTAR          25 Professional PHR KODAK 5327 PHR/NONE/NONE
KODAK    FUNTIME        100 FA              FUNTIME 100 KODAK FA 100/NONE/NONE
KODAK    FUNTIME        200 FB              FUNTIME 200 KODAK FB 200/NONE/NONE
KODAK    FUNTIME        200 FB Gen 2        KODAK FB 200-2 79-2/NONE/NONE
KODAK    GOLD           100 Gen 2           KODAK 5095|GOLD 100-2/MAGENTA/MAGENTA
KODAK    GOLD           100 Gen 4           GOLD 100-4 KODAK 100-4/MAGENTA/GREEN
KODAK    GOLD           100 Gen 6           GOLD 100-6 KODAK FILM/MAGENTA/NONE
KODAK    GOLD           1600 Gen 1          KODAK 5091|GOLD 1600-1/YELLOW/NONE
KODAK    GOLD           200 Gen 1           KODAK GOLD 200-1 5096|GOLD 200-1/GREEN/GREEN
KODAK    GOLD           200 Gen 2           KODAK 5096|GOLD 200-2/BLUE/GREEN
KODAK    GOLD           200 Gen 4           GOLD 200-4 KODAK 200-4/GREEN/GREEN
KODAK    GOLD           200 Gen 6           GOLD 200-6 KODAK FILM/GREEN/NONE
KODAK    GOLD           400 Gen 1           KODAK GOLD 400-1 5097|GOLD 400-1/BLUE/BLUE
KODAK    GOLD           400 Gen 2           KODAK 5097|GOLD 400-2/BLUE/NONE
KODAK    GOLD           400 Gen 3           KODAK 400-3|GOLD 400-3/BLUE/2-BLUE
KODAK    GOLD           400 Gen 5           KODAK 400-5 GOLD 400-4/BLUE/NONE
KODAK    GOLD           400 Gen 6           GOLD 400-6 KODAK FILM/BLUE/BLUE
KODAK    GOLD           800 Gen 1           83-14 GOLD 800 83-14 KODAK 800/NONE/NONE
KODAK    GOLD           III 100  Gen 4      GOLD 100-4 KODAK 100-4/MAGENTA/GREEN
KODAK    GOLD           III 200 Gen 4       GOLD 200-4 KODAK 200-4/GREEN/GREEN
KODAK    GOLD           III 400 Gen 5       KODAK 400-5 GOLD 400-4/BLUE/NONE
KODAK    GOLD           Max 800 Gen 2       GOLD 800-2 KODAK FILM/NONE/NONE
KODAK    GOLD           Plus 100 Gen 3      KODAK 100-3|GOLD 100-3/GREEN/MAGENTA
KODAK    GOLD           Plus 100 Gen 4      GOLD 100-4 KODAK 100-4/MAGENTA/GREEN
KODAK    GOLD           Plus 100 Gen 5      GOLD 100-5 100-5 KODAK/MAGENTA/MAGENTA
KODAK    GOLD           Plus 200 Gen 3      GOLD 200-3|KODAK 200-3/GREEN/NONE
```

```
KODAK    GOLD           Super 200 Gen 4     GOLD 200-4 KODAK GOLD 200-4/GREEN/GREEN
KODAK    GOLD           Super 200 Gen 5     GOLD 200-5 200-2 KODAK/NONE/GREEN
KODAK    GOLD           Ultra 400 Gen 4     KODAK 400-4|GOLD 400-4/NONE/WIDE BLUE
KODAK    GOLD           Ultra 400 Gen 5     KODAK 400-5 GOLD 400-4/BLUE/NONE
KODAK    Internegative  +10\% Contrast       Increases contrast 10\%
KODAK    Internegative  +20\% Contrast       Increases contrast 20\%
KODAK    Internegative  +30\% Contrast       Increases contrast 30\%
KODAK    Internegative  +40\% Contrast       Increases contrast 40\%
KODAK    KODACOLOR      100 Print Gen 4     GOLD 100-4 KODAK 100-4/MAGENTA/GREEN
KODAK    KODACOLOR      200 Print Gen 4     GOLD 200-4 KODAK GOLD 200-4/GREEN/GREEN
KODAK    KODACOLOR      400 Print Gen 5     KODAK 400-5 GOLD 400-4/BLUE/NONE
KODAK    KODACOLOR      CII                 KODAK SAFETY FILM 5035/NONE/GREEN
KODAK    KODACOLOR      DA 100 Gen 5        KODAK DA-5 KODAK FILM/NONE/2 MAGENTA
KODAK    KODACOLOR      II                  KODAK SAFETY FILM 5075/GREEN/GREEN
KODAK    KODACOLOR      VR 100 Gen 1        KODAK CP 100 5094/NONE/NONE
KODAK    KODACOLOR      VR 100 Gen 2        5094/NONE/NONE
KODAK    KODACOLOR      VR 1000 Gen 1       KODAK CF 1000 5090/NONE/YELLOW
KODAK    KODACOLOR      VR 1000 Gen 2       KODAK CF 1000 5090|VR1000|KODAK 5090/YELLOW/YELLOW
KODAK    KODACOLOR      VR 200  Gen 4       VR 200-4 KODAK VR 200-4/NONE/NONE
KODAK    KODACOLOR      VR 200 / 5093
KODAK    KODACOLOR      VR 200 Gen 1        KODAK CL 200 5093/NONE/GREEN
KODAK    KODACOLOR      VR 200 Gen 2        VR200-2|KODAK 5093/NONE/NONE
KODAK    KODACOLOR      VR 200 Gen 5        KODAK VR 200-5 79-2/NONE/NONE
KODAK    KODACOLOR      VR 400 Gen 1        KODAK CM 400 5079/NONE/BLUE
KODAK    KODACOLOR      VR 400 Gen 2        79-4 VR 400 KODAK FILM/NONE/NONE
KODAK    KODACOLOR      VRG 100 Gen 1       KODAK CA 100 5095/MAGENTA/GREEN
KODAK    KODACOLOR      VRG 100 Gen 2       KODAK CA 100 5095|VRG 100|KODAK 5095/MAGENTA/MAGENTA
KODAK    KODACOLOR      VRG 200 Gen 1       KODAK CB 200 5096|VRG 200|KODAK 5096/GREEN/GREEN
KODAK    KODACOLOR      VRG 400 Gen 1       KODAK CC400 5097|VR-G 400|KODAK 5097/BLUE/BLUE
KODAK    MAX ZOOM       800-3               Kodak GT 800-3/NONE/NONE
KODAK    PORTRA         160NC               KODAK 160NC/NONE/NONE
KODAK    PORTRA         160VC               KODAK 160VC/NONE/NONE
KODAK    PORTRA         400NC               KODAK 400NC/NONE/NONE
KODAK    PORTRA         400VC               KODAK 400VC/NONE/NONE
KODAK    PORTRA         800                 Kodak Supra 800/NONE/NONE
KODAK    Pro            100 PRN             KODAK PRN 6329 or 4329/NONE/NONE
KODAK    Pro            400  PPF-2          KODAK 5080 [or] 6080 PPF-2/NONE/NONE
KODAK    Pro            400 MC  PMC         KODAK 5059 [or] 6059 PMC/NONE/NONE
KODAK    Prof Color Neg 100                 /NONE/NONE
KODAK    ROYAL          GOLD 100            ROYAL 100 KODAK RA 100/NONE/NONE
KODAK    ROYAL          GOLD 100 Gen 2      ROYAL 100-2 RA KODAK FILM/NONE/NONE
KODAK    ROYAL          GOLD 1000           ROYAL 1000 KODAK RF 1000 KODAK FILM/NONE/NONE
KODAK    ROYAL          GOLD 200            ROYAL 200 RB 200 KODAK/NONE/NONE
KODAK    ROYAL          GOLD 200 Gen 2      ROYAL 200-2 RB KODAK FILM/NONE/NONE
KODAK    ROYAL          GOLD 25          RZ ROYAL 25 KODAK RZ 25 KODAK FILM/NONE/NONE
KODAK    ROYAL          GOLD 25 Copystand   ROYAL 25 KODAK RZ 25 KODAK FILM/NONE/NONE
KODAK    ROYAL          GOLD 400            ROYAL 400 KODAK RC 400/NONE/NONE
KODAK    ROYAL          GOLD 400 Gen 2      ROYAL 400-2 RC KODAK FILM/NONE/NONE
KODAK    SUPER GOLD     100  Gen 4          GOLD 100-4 KODAK 100-4/MAGENTA/GREEN
KODAK    SUPER GOLD     1600 GF Gen 2       GOLD 1600-2 KODAK GF 1600-2/NONE/NONE
KODAK    SUPER GOLD     200 Gen 4           GOLD 200-4 KODAK 200-4/GREEN/GREEN
KODAK    SUPER GOLD     400 Gen 5           KODAK 400-5 GOLD 400-4/BLUE/NONE
KODAK    Supra          100                 Kodak Supra 100/NONE/NONE
KODAK    Supra          400                 KODAK Supra 400/NONE/NONE
KODAK    Supra          800                 KODAK Supra 800/NONE/NONE
KODAK    T-MAX          100 Professional    KODAK TMX 5052/NONE/NONE
KODAK    T-MAX          3200 Professional   KODAK TMZ 5054/NONE/NONE
KODAK    T-MAX          400 Professional    KODAK TMY 5053/NONE/NONE
KODAK    T-MAX          T400 CN             KODAK T400 CN/NONE/NONE
KODAK    TMAX-100       D-76 CI = .40       D-76 Developer Contrast Index = .40
KODAK    TMAX-100       D-76 CI = .50       D-76 Developer Contrast Index = .50
KODAK    TMAX-100       D-76 CI = .55       D-76 Developer Contrast Index = .55
```

```
KODAK    TMAX-100       D-76 CI = .70       D-76 Developer Contrast Index = .70
KODAK    TMAX-100       D-76 CI = .80       D-76 Developer Contrast Index = .80
KODAK    TMAX-100       TMAX CI = .40       TMAX Developer Contrast Index = .40
KODAK    TMAX-100       TMAX CI = .50       TMAX Developer Contrast Index = .50
KODAK    TMAX-100       TMAX CI = .55       TMAX Developer Contrast Index = .55
KODAK    TMAX-100       TMAX CI = .70       TMAX Developer Contrast Index = .70
KODAK    TMAX-100       TMAX CI = .80       TMAX Developer Contrast Index = .80
KODAK    TMAX-400       D-76 CI = .40       D-76 Developer Contrast Index = .40
KODAK    TMAX-400       D-76 CI = .50       D-76 Developer Contrast Index = .50
KODAK    TMAX-400       D-76 CI = .55       D-76 Developer Contrast Index = .55
KODAK    TMAX-400       D-76 CI = .70       D-76 Developer Contrast Index = .70
KODAK    TMAX-400       D-76 CI = .80       D-76 Developer Contrast Index = .80
KODAK    TMAX-400       TMAX CI = .40       TMAX Developer Contrast Index = .40
KODAK    TMAX-400       TMAX CI = .50       TMAX Developer Contrast Index = .50
KODAK    TMAX-400       TMAX CI = .55       TMAX Developer Contrast Index = .55
KODAK    TMAX-400       TMAX CI = .70       TMAX Developer Contrast Index = .70
KODAK    TMAX-400       TMAX CI = .80       TMAX Developer Contrast Index = .80
KODAK    ULTRA Zoom     800-3               Kodak GT. 800-3/NONE/NONE
KODAK    VERICOLOR      400 PLUS Prof VPH-2 KODAK 3059 [or] 9059 VPH-2/NONE/NONE
KODAK    VERICOLOR      400 PROF        VPH KODAK 5028 VPH/BLUE/MAGENTA
KODAK    VERICOLOR      400 Prof  VPH-2     KODAK 5028 [or] 6028 VPH-2/NONE/NONE
KODAK    VERICOLOR      HC 100 Prof VHC-2   KODAK VHC-2 3329 [or] 8329/NONE/NONE
KODAK    VERICOLOR      HC 4329         VHC KODAK VHC 4329
KODAK    VERICOLOR      HC 6329         VHC KODAK VHC 6329
KODAK    VERICOLOR      III Pro             KODAK 5026 VPS/NONE/MAGENTA
KODAK    VERICOLOR      L 4013          VPL KODAK VPL 4013
KODAK    VERICOLOR      L 6013          VPL KODAK VPL 6013
KONICA   IMPRESSA       50                  IMPRESSA/RED GREEN/NONE
KONICA   KONICA COLOR   SR-G 160            KONICA COLOR SR-G 160/NONE/NONE
KONICA   KONICA COLOR   SR-G 3200           KONICA SR-G 3200 DASHES/GREEN/3 GREEN
KONICA   KONICA COLOR   SUPER SR 400        KONICA COLOR SUPER SR 400/GREEN/GREEN
KONICA   KONICA COLOR   SUPER SR100         KONICA COLOR SUPER SR100/MAGENTA/MAGENTA
KONICA   KONICA COLOR   SUPER SR200 GEN 1   KONICA SUPER SR 200 THREE DASHES/NONE/GREEN
KONICA   KONICA COLOR   SUPER SR200 GEN 2   KONICA SUPER SR 200 DASHES/MAGENTA/3 GREEN
KONICA   XG             400                 KONICA X400/NONE/GRN DIAMONDS
POLAROID POLAROID       CP 200              POLAROID CP 200/GREEN DOTS/NONE
POLAROID POLAROID COLOR HD2 100             POLAROID COLOR HD2 100/MAGENTA/MAGENTA
POLAROID POLAROID COLOR HD2 200             POLAROID COLOR HD2 200/MAGENTA/GREEN
POLAROID POLAROID COLOR HD2 400             POLAROID COLOR HD2 400/GREEN/GREEN
```

Menus

There are a number of commands that can be chosen from the menus in the menu bar which are described below.

File|Save
Same as pressing the "Save" button.

File|Page setup
This command lets you control how the scanned image is placed on the page.

File|Print setup
This command lets you control how the printer is configured.

File|Print
This command prints the current preview or scan.

File|Load options
This command lets you load the current options settings from a file.

File|Save options
This command lets you save the current options settings to a file.

File|Default options
This command sets all options for the current scanner and scan mode to their default values.

File|Release memory
This command releases the memory used by VueScan to store the most recent scans and previews. This is useful if you need more memory for another program.

You can control how much memory VueScan will use by setting the "Prefs|Preview Mem" and "Prefs|Scan mem" options if your system is short on memory (or has plenty!). This option is only available when "Device|Option types" is set to "Advanced".

File|Quit
This command causes VueScan to exit. The current option settings will be saved.

Device|Preview
Same as pressing the "Preview" button.

Device|Scan
Same as pressing the "Scan" button.

Device|Abort
Same as pressing the "Abort" button.

Device|Eject
Same as pressing the "Eject" button.

Device|Calibrate

This command causes a scanner calibration on those scanners that support calibration. Generally calibration compensates for three things:

- Lighting is usually uneven from one side of a scan to another
- Each CCD element has a slightly different sensitivity to light
- The dark voltage level of each CCD element is slightly different

When properly calibrated, then, the scanner would theoretically produce the same values for each pixel if an image that is a single tone and color were scanned.

Note: before calibrating, make sure any film holder or images are removed, and that a flatbed scanner glass is clean.

Sometimes the calibration data gets stored inside the scanner memory, sometimes it's done once for every scan and sometimes VueScan stores the calibration data in a file when the "Device|Calibrate" command completes.

On the PhotoSmart scanner, this is primarily useful for the print mode. You need to make sure you run this before making any scans of photographs (i.e. 5x7 prints). It creates vuescan.s10 (original PhotoSmart) or vuescan.s20 (PhotoSmart S20), which contains the calibration data for each of the 2700 scanner elements. If your scans have streaks in the scan direction, you probably need to clean the dust out of the scanner and then recalibrate.

On the Canon FS4000, this command creates vuescan.fs1, vuescan.fs2, and vuescan.fs3. These files contain the calibration data for the negative, slide and APS adapters.

Device|Focus

This command focuses the scanner. The center of this focus area is displayed on the preview with a small animated box, and can also be changed with the "Device|Focus X offset" and "Device|Focus Y offset" options (options displayed only when the scanner is capable of this).

Image|Zoom In

Same as pressing the "Zoom In" button

Image|Zoom Out

Same as pressing the "Zoom Out" button

Image|Rotate left

Rotates the image 90 degrees counterclockwise

Image|Rotate right

Rotates the image 90 degrees clockwise

Image|Flip

Rotates the image 180 degrees

Image|Refresh

If you've set "Prefs|Refresh delay" to zero, then this command updates the current image or histogram to match any option changes that have been made.

Help|VueScan Help

This command displays the contents of the release notes.

Help|About

This command displays the version number and a box for entering your serial number.

This serial number is stored in:

```
Mac OS X   ~/.vuescanrc
Mac OS 9   System Folder:Preferences:VueScan Preferences
Windows    Registry HKEY_CLASSES_ROOT\VuePrint\license\ActivationKey
Linux      ~/.vuescanrc
```

On Mac OS X and Linux, you can also store the serial number in /etc/vuescanrc by creating this file with the following two lines:

```
[VueScan]
SerialNumber=xxxxxx
```

This lets multiple users on the same computer share the same serial number.

Buttons

There are a number of buttons that can be used to initiate or abort scanning.

Preview button

This button does a quick preview scan of the scan region and displays it in the Preview tab.

A preview scan is typically done at a lower resolution and is therefore faster. From the preview scan you can choose appropriate cropping, filtering and color balance options that will be applied to the final scan.

If you want to preview more than one frame at a time, use the "Device|Batch scan" option. Several previews can be in memory at the same time, and you can change which preview you are viewing by changing the number in "Device|Frame number".

If you're scanning from disk, and specify the starting file in numbered series (e.g. scan0001.tif) you can use the Frame number to select a file. For if Disk file name is set to "scan0001.tif" and Frame number is 12, VueScan will look for the file "scan0012.tif" when Preview is pressed.

Other options for specifying numbering schemes for VueScan files are documented on the "Files" tab help topics.

Scan button

This button does a scan, displays the image in the Scan tab and optionally saved to the file types enabled in the Files tab.

If a preview scan is not available, VueScan will first do a preview in order to calculate exposure and crop area. If "Device|Lock exposure" is set and "Crop|Crop auto position" is not set, no preview will be done.

If you want to scan more than one frame at a time, use the "Device|Batch scan" option.

If you're scanning from disk, and specify the starting file in numbered series (e.g. scan0001.tif) you can use the Frame number to select a file. For if Disk file name is set to "scan0001.tif" and Frame number is 12, VueScan will look for the file "scan0012.tif" when Preview is pressed.

Other options for specifying numbering schemes for VueScan files are documented on the "Files" tab help topics.

Abort button

This button aborts a long−running operation, such as scanning, cropping, or calibrating.

To stop a batch after the current frame is complete, instead set "Device|Batch scan" to "Off".

Eject button

This button ejects film or paper from the scanner if possible. If using an APS adapter, this rewinds the film in the cassette.

If the adapter has been ejected or rewound previously, pressing this button again re−inserts the film.

Zoom In button

This button zooms into the image in the Preview tab, or if the Scan tab is displayed it zooms into the image in the Scan tab. The zoom is a factor of two.

Zoom Out button

This button zooms out of the image in the Preview tab, or if the Scan tab is displayed it zooms out of the image in the Scan tab. The zoom is a factor of two.

Save button

This button causes the most recent preview or scan to be saved as TIFF, JPEG, Index and/or Raw files, as specified on the Files tab. If you have just done a preview, the preview will be saved; if you have just done a scan the scan will saved. The only difference will be the resolution of the output file(s) as specified in "Device|Preview resolution" and "Device|Scan resolution" −− Crop, Filter, and Color settings will be applied to both previews and scans.

Typically, you'll want to save only the result of the scan. By setting "Device|Auto save" to "Scan", files will be saved automatically when you press the Scan button.

If you have done a final scan and find you wish to make adjustments to crop, filter or color settings, you need not re−scan. Simply make the adjustments −− VueScan will refresh the scan in memory and the Save button will cause a new file(s) to be saved.

Print button

This button causes the most recent preview or scan to be printed.

Device tab

This tab contains the options that control the raw data coming from the scanner.

Option types

Use this option to select how many VueScan options to display. You can choose Basic, Intermediate or Advanced options.

Selecting intermediate or advanced modes will reveal additional options. Some options are available only when your scanning hardware supports their function. And yet other options will display only when certain other related options are set. All options are documented in the user's guide.

VueScan is a powerful tool −− one of the things that makes this true is that it does a very good job with the basic default settings. As you learn how the program works, or find you want additional features you can select intermediate or advanced modes.

- Basic mode provides the options you need to scan from your scanner to an automatically cropped and color balanced TIFF file that suits your purpose. Even in basic mode, the most powerful features of VueScan are available, including Color balancing and batch processing options.

- Intermediate mode provides additional options for controlling your scanner (device), specifying resolutions, scanning to alternate file formats, including to "raw" files, plus some additional color control options.

- Advanced mode provides additional abilities to customize VueScan, specify user preferences, and change several other thing most users would not need.

Scan from

You can have more than one scanner on your system, and this lets you specify which scanner you want to use.

A special "scan from" source is from a disk file. On the Files tab, VueScan provides a special option to save the raw output of a regular scan to a file. This option lets you read that raw file as though you were scanning from your hardware.

If you set this option to "Disk", then you'll be able to enter a file name in the "Disk file name" option.

Disk file name

Specify the name of an image file that VueScan will read when you set the "Scan from" option to "Disk". Usually this is a raw scan file you create with VueScan.

Disk files can be scanned just like a normal scanner. The "Device|Preview resolution" and "Device|Scan resolution" options work just as you'd expect, the preview works as you'd expect, and all the crop options work as you'd expect.

Disk files can be either TIFF files or JPEG files. While typically these files are the output of a raw can, they can be any valid JPEG or TIFF file.

Mode

Use this option to specify the type of scan you want to make. This is automatically sensed on some scanners, but you need to set this manually on other scanners.

This option is used by VueScan for two things:

1) Indirectly indicates whether the scan data came from reflective media or transmissive media. "Device|Media type" will be automatically set to the most recent setting for the selected mode.

2) Indicates the color space of the scan data (i.e. the color characteristics of the CCD and light that exposed it)

When scanning from disk, you'll need to specify the original source of the scan. If you know the scanner that made the disk file, select that scanner. Otherwise select "Transparency" if the scan was from any kind of transmissive media (e.g. color slide film), or "Flatbed" if the scan was from any kind of reflective media, (e.g. photo). Make sure that "Device|Media type" is set accordingly.

Image type

When "Device|Scan resolution" is set to "Auto" (or when in Basic mode), this option is used to determine appropriate resolution that the scanner should use, as well as and type for the output file. Note that this does not define the resolution (dpi) of the output file, as that also depends on the "File|Image size" setting.

Image type describes the expected use for the final image, as this is typically what drives the decision of scan resolution and file format.

A scanner resolution is chosen that produces a JPEG or TIFF file with the following approximate number of pixels; higher scanner resolutions result in more pixels and larger file sizes (for a given JPEG quality or TIFF compression setting):

```
Option   Dimensions   Type  Pixels
=======  ===========  ====  ======
Email     600 x  400  JPEG  .24M
Web       800 x  600  JPEG  .48M
Print    1600 x 1200  JPEG  1.9M
Edit     2048 x 1536  TIFF  3.1M
Archive  3000 x 2000  TIFF  6.0M
```

Automatic file type selection (JPEG or TIFF) only works in Basic mode.

Media type

There are two lists of media types, depending on whether you're scanning paper (reflective media) or film (transmissive media).

Reflective media

When scanning paper, the media type is used to control whether the final image is color or black/white, and whether the image is continuous tone (photo), halftone (magazine or newspaper) or bi−level (line art or text).

When media type is set to Magazine or Newspaper, a color (magazine) or black and white (newspaper) descreen filter will be applied and scan output resolution will be limited to 75dpi. With

Newspaper, output images will be black and white (no color).

When media type is set to Line art or Text, scan output resolution will be limited to 300dpi.

Transmissive media

When scanning film, this option indicates whether you're using positive film (i.e. slides), color negative film, or black&white negative film. This option causes the default film type to be changed, but also sets up the scanner for scanning orange−colored media (i.e. negatives) by exposing the green and blue channels more than the red channel.

If you choose "Image", no film correction is used, so the cropped file will be comparable to the image on the film. If you choose "Negative film" or "Slide film", the cropped image will comparable to the original scene that was photographed. When you use either film option, options on the Color tab lets you choose the film manufacturer, the film brand, and the film type to further refine how VueScan processes the result.

The difference between "Image" and "Slide film" is subtle. If you take a picture of the same scene with Kodachrome and Ektachrome film and scan them with the "Slide film" setting, VueScan tries to make the resulting scan look the same (i.e. to resemble the original scene). If you use the "Image" setting, the resulting scans will look different and will reflect the slightly different color characteristics of Kodachrome and Ektachrome film.

If you then took a picture of this same scene with Kodak Gold color negative film and scanned it using the "Negative film" setting, the resulting scan should look close to the scan you get from using the "Slide film" setting and scanning the Kodachrome and Ektachrome slides (i.e. all three should look like the original scene).

VueScan contains sensitometric data for 200 types of negative film and 4 types of slide film. If you're scanning other types of slide film, choose Kodachrome for K14 process slides, and Ektachrome for E6 process slides.

Bits per pixel

This option specifies how many bits per pixel are read from the scanner. The more bits you read from the scanner, the higher quality the image but the slower the transfer speed at full resolution. If you specify a value for bits per pixel that the scanner isn't capable of, the closest valid option is used instead.

Scanning at 24−bit resolution can add gaps to the final image histogram (compared to 48−bit resolution), but it can also speed up scanning with some scanners and often the end result is virtually indistinguishable from 48−bit scans.

Batch scan

If you set this option to "All", pressing either the Preview or Scan button will preview or scan all the frames in the scanner. If you set it to "List", you can specify a list of frames to preview or scan.

Note that you can change this to "Off" during a long−running batch scan, and this will stop scanning when the current frame is done (this is a better way to stop than pressing the Abort button, since this will leave files half−written).

Batch scanning also works when scanning from disk files. In this case, the "All" option refers to all disk files named using a series of numbers (e.g. scan0001.tif, scan0002.tif, etc.). If the "scan0001.tif" file in the series is specified as "Device|Disk file name", the, "Device|Frame number" will cause VueScan to reference the file with the same number.

Batch list

You can specify multiple frames by specifying multiple frame numbers, or specifying a range of frames like "1−3", or some combination of both (i.e. "1,3,5−7" causes frames 1,3,5,6,7 to be scanned).

You can also add an additional rotation to any frame or range of frames by putting a letter along with each frame number. Use "N" for no rotation, "L" for left, "F" for flip, "R" for right, and "D" for default rotation. The letters may be in upper−case or lower−case.

For example, adding "3r" to the batch list means scan frame 3 and rotate it 90 degrees to the right, "2L" says to scan frame 2 and rotate it 90 degrees to the left, "1F,2L,4R" says to scan frame 1 flipped, frame 2 rotated to the left, and frame 4 rotated to the right. If no letter is specified (or if "D" is used), then the last rotation setting in the batch list will apply for all subsequent frames.

Using Batch list, you can also preview scan a group of images in one step, make adjustments on each previewed frame, then scan to apply each adjustment for each frame in the batch. So the process is:

- Specify the batch list. For example, specify "1−6" to specify 6 frames in a film holder.
- Preview the batch. All six frames will be previewed.
- Adjust settings for each frame. Change "Device|Frame number" to view each previewed frame. Adjust rotation, cropping, filters, colors for the frame. When done, move to the next frame.
- Scan the batch. VueScan will create a series of cropped files (e.g. "crop0001.tif", "crop0002.tif" ... "crop0006.tif") that reflect the adjustments made to each frame.

Frame number

If you have a film scanner that can move the film holder, you can use this option to select which slide or negative frame you want to scan. This option will only be displayed if your scanner supports this.

There are several advanced uses of "Device|Frame number" to consider when using the "Device|Scan from disk", or "Crop|X/Y Images" options.

When scanning from disk files, VueScan will consider a number at the end of the "Device|Disk file name" as the starting point in a series, and "Device|Frame number" to reference a file relative to that starting point. So if you have scanned a whole roll of film and have raw files "scan0001.tif" through "scan0036.tif" you may specify "scan0001.tif" as the Disk file name, and then use Frame number to work on different scanned files as though they were frames. Frame number 18 would then use the disk file "scan0018.tif" as the source when you press Preview or Scan.

Frame number may also be used if you have set up either "Crop|X images" or "Crop|Y images" to a value greater than 1. Frames are counted from left to right, top to bottom. See the topic for "Crop|X/Y Images" for further information.

Frame offset

This option sets an offset for the start of the each frame on a film strip on the Nikon LS−30, LS−40, LS−2000 and LS−4000 scanners. It is not available for other film scanners or flatbed scanners.

Use this option if there is some leader on the film strip, or if you're scanning panoramic frames and need to scan what would otherwise be the gap between 35mm frames. This option can be either a positive or negative number.

With the LS−40 and LS−4000, the starting position of a frame is affected by how the start of each frame is related to the sprocket holes. There's no automatic alignment of the start of the frame with the sprocket holes in the current version of VueScan, so it's best to iteratively set the frame offset for each film strip by doing a preview of frame 2 and estimating the number of millimeters that need to be offset.

You can get a more exact estimate of the frame offset by moving the mouse over the preview while holding down the control key.

The units for this option are normally millimeters, but this can be changed with the "Crop|Crop units" option.

Frame spacing

This option sets the spacing between frames for some Medium Format scanners that support this in hardware. It is not available for most film scanners or flatbed scanners. This is the distance between the starting positions of two consecutive frames.

The units for this option are normally millimeters, but this can be changed with the "Crop|Crop units" option.

Preview resolution

Use this option to specify the resolution the scanner will when performing the preview scan.

If set to "Auto", a resolution will be chosen that results in a preview with roughly one million pixels. The exact number of pixels depends on the resolutions your scanner is able to produce.

You can also select a specific preview resolution from the list.

Lower resolutions may take somewhat less time to scan, and will use less memory. The preview resolution needs only to be enough for you to determine appropriate cropping, filter settings, color settings and so on; the result of the final scan is determined by Scan resolution and other settings, not Preview resolution.

Scan resolution

Use this option to specify the resolution the scanner will use when performing the final scan.

If set to "Auto", a resolution will be chosen based on the setting of "Device|Image type". The exact number of pixels depends on the resolutions your scanner is able to produce −− the number of pixels is displayed in the status area of the VueScan window.

You can also select a specific scan resolution from the list.

If "Device|Scan from" is set to "Disk", the list will display fractional resolutions of the original file, i.e. 1/2, 1/3, 1/4, 1/5, 1/6, 1/7 and 1/8. Most scanners, on the other hand, are only able to scan at even

halves of the full scanner resolution: 1/2, 1/4 and 1/8. The additional granularity provided with the Scan from Disk option can be obtained with the scanner by scanning at full resolution and using the "Files|TIFF/JPEG size reduction" option.

Rotation

This option describes the orientation of the images in the Preview and Scan tabs and in TIFF, JPEG, Index and Raw files. This is relative to the unrotated image that comes from the scanner.

If you don't have much memory on your system, set this option to "None" and rotate the image later with an image viewer − this will make the cropping go a lot faster. Using "Right" rotates 90 degrees clockwise, using "Flip" rotates 180 degrees, and using "Left" rotates 90 degrees counterclockwise.

Note that rotation happens after mirroring.

Mirror

This options mirrors images left/right after rotating. This lets you insert film facing any direction you'd prefer.

Auto focus

Set this option to enable a focus before doing a preview or scan (or both). The scanner will focus on the point specified by "Crop|Focus X/Y Offset". This location is visually represented by an animated cross−hair in the Preview tab after a preview scan is done.

Set to "Preview" so that focus is only done one time if the scan will be done directly after the preview. Set to "Both" otherwise, or to ensure the most accurate focus, as in some cases, the heat generated by the preview can cause the media to bend.

If you have locked exposure and turned off auto−cropping (see "Advanced Workflow Suggestions") no preview will be performed. In this case, you must focus at scan time, so either "Scan" or "Both" will ensure that a focus is performed.

Focus

Set this option to a value between −1 and 1 to manually change the device focus. The nominal value for most scanners is 0.

Auto scan

If this option is set to "Preview" or "Scan" and if the scanner can sense when an image is inserted, VueScan will simulate pressing either the "Preview" or "Scan" buttons when an image is inserted.

This option is reset to "None" if you press the "Abort" button.

Auto save

If this option is set to "Preview" or "Scan", VueScan will save files after a preview or scan completes. If set to "None" files will be saved only after pressing the Save button.

In most cases, this option should be set to "Scan".

Auto print

If this option is set to "Preview" or "Scan", VueScan will print after a preview or scan completes. If set to "None" scans will be printed only when you press the Print button.

In most cases, this option should be set to "Scan".

Auto eject

This option controls when the media is ejected (assuming the scanner is capable of ejecting media). It can be ejected after a preview, after a scan, or when VueScan exits.

The media can be ejected manually by pressing the Eject button.

When "Device|Batch scan" is set, the ejection will occur after the batch is complete.

Number of samples

This option is available for scanners that support multi−sampling. As the scanner head passes over the media it makes multiple exposures for each location. The results for all samples are averaged.

This is useful because any one exposure may be inaccurate, resulting in noise in the output. Noise will appear as one pixel whose color or tone is different than surrounding pixels. By taking multiple samples and averaging the results, the effect of inaccurate exposure is reduced.

This option will slow down scanning because the scanner is doing more. You should experiment with your scanner to see which balance of speed and accuracy is appropriate.

Number of samples is similar to Number of passes. Multi−sampling is preferable as the scanner head is positioned once, which ensures that the same area will be exposed for each sample. Multi−sampling is available only on a limited number of scanners.

Number of passes

This option provides similar function as the Number of samples option, but does not require the scanner to provide hardware support for multi−sampling. Each pass causes a full scan. After all passes are complete, the results are averaged, and the average is saved.

This is useful because any one exposure may be inaccurate, resulting in noise in the output. Noise will appear as one pixel whose color or tone is different than surrounding pixels. By taking multiple passes and averaging the results, the effect of inaccurate exposure is reduced.

This option will slow down scanning because the scanner is doing more. You should experiment with your scanner to see which balance of speed and accuracy is appropriate.

On multiple passes the scanner head needs to be repositioned precisely at the same location as where it started on the previous pass. Some scanners do not support this operation. Others do, but reposition incorrectly, which will cause a blurred result.

Note that the PhotoSmart scanner doesn't align multiple scans very well because of the way it uses rubber rollers to move the film or slides. For this reason, this option isn't useful on the PhotoSmart.

Other scanners (such as the Polaroid SprintScan 4000) have alignment problems of a few pixels between each scan pass.

Scan from preview

When this option is set, VueScan will do a single preview scan and then will use the preview results to crop and write the scan results.

This is most useful for scanners that are unable to re−position a frame precisely, notably the Photosmart because it advances film with rubber rollers. Other scanners that move the scanned media (e.g. with a film holder) may have slight alignment problems.

If the area you crop in the Preview tab is misaligned with the image that is produced in the final scan, this option may not be useful.

When scanning from preview, set "Device|Preview resolution" to the same value as "Device|Scan resolution".

This option is equivalent to pressing the Save button after a preview.

Long exposure pass

This option provides a way to get additional detail from the darker parts of the scanned image. It is available on scanners that are able to increase the CCD exposure time.

A first pass is done as usual using the normal RGB exposure. This will be an appropriate exposure for the image as a whole. Then a second pass is performed with a longer exposure, which can reveal additional detail in dark areas not captured in the first pass. VueScan then merges the results of the two by choosing from either the first or second (long exposure) pass.

Pixels that are near saturated pixels on the long pass aren't merged with the scan. This reduces the problems of CCD blooming − saturated pixels spilling into nearby pixels. However, some CCD's have a severe problem with charge bleeding from saturated pixels to nearby pixel, causing a problem where dark areas are adjacent to bright areas.

Note that this option sometimes produces image artifacts near sharp transitions between dark and light areas, and should be used with care. It works better on some scanners than others, and it isn't recommended as a default option.

Lock exposure

Set this option to lock the CCD exposure values to auto−exposure values computed for the most recent preview or scan, or as adjusted manually with the "Device|RGB exposure" option.

This option can save time when scanning a batch of images with similar characteristics, e.g. a roll of film.

If you turn on this option and also clear "Crop|Crop auto position", then the "Scan" button won't first do a preview scan. This can save time when batch scanning.

See the "Advanced workflow suggestions" section of this User's Guide for more information.

RGB/Infrared exposure

On scanners that are able to vary the CCD exposure time, this option lets you multiply the exposure time by a user−specified value. This is sometimes useful when scanning very dark slides with bright highlights when you want to get more detail from the dark parts of the slides.

There's seldom any reason to increase these values from the values computed by the auto exposure.

If the CCD is over−exposed when scanning color negative film, then the film base color gets messed up and the dark parts of the image (the bright parts of the negative) will lose detail.

Lock film base color

This option locks the color of the film substrate to values calculated at the most recent preview or scan. These values are displayed in the "Color|Film base color" fields when this option is set.

Negative film has an orange tone that needs to be subtracted from what the scanner reads in order to produce the correct result. This orange color can be seen by looking at an unexposed (clear) area of developed negative film. For a given film type and roll of film (all of which is developed under the same conditions), this correction will be the same for all frames, so needs to be set only once.

This option is only available after "Device|Lock exposure" is set, and then after a preview or scan.

This option can save time when scanning a batch of images with similar characteristics, e.g. a roll of film.

See the "Advanced workflow suggestions" section of this User's Guide for more information.

Lock image color

This option locks the black and white point used in the most recent preview or scan. This is useful after scanning the first image in a series of images when you want to make the lighting consistent in future scans (especially when scanning panoramas). This option is only displayed if you first set the "Device|Lock exposure" option and the "Device|Lock film base color" option.

See the "Advanced workflow suggestions" section of this User's Guide for more information.

Crop tab

The crop tab lets you specify full automatic cropping, full manual cropping and a range of options between.

Note that a VueScan also lets you change these values by using the mouse in the preview image. The crop area is displayed as a blinking dashed line that defines the area for subsequent VueScan operations. Position the mouse over the blinking line and drag to reposition any edge. Click and drag anywhere within the crop area to reposition the entire crop area. Click the scan tab to have VueScan automatically display the result of the cropping. The scan tab will use the data from the preview if a full scan has not been done yet.

The area included in the crop are is important in two ways. First, obviously this is the area of the scan that will be included in the output files. Second, this area is used to calculate color balance, histogram, and other settings. Be sure not to including the border around the edge of an image as part of the crop as this may cause these settings to be calculated incorrectly. "Crop|Buffer" can also be used to prevent inadvertent inclusion of data outside of the desired frame in color settings.

Crop units

Use this option to choose the units to use when display measurements in the Crop tab. You can choose pixel, mm, cm or inch units.

This setting does not affect the size of output.

Crop auto position

If this option is set, the crop box is positioned automatically, finding the best placement of this box to capture as much of the image as possible.

If you clear this option and set the "Device|Lock exposure" option, pressing the "Scan" button won't first do a preview scan. This can save time when batch scanning.

X/Y offset

This is the offset in the scan region of the start of the image data.

These positions are relative to the upper left−hand corner of the scan region. See "Crop|Region".

Crop size

This option specifies the method used to determine the size of the cropped image:

Manual

Lets you enter all of the crop sizes manually. This option will also be selected if you have adjusted the crop size or position using the mouse on the preview window.

Auto

Analyzes the image to find the edges automatically using built−in rules. This setting works well most of the time if you want to capture the whole image.

Maximum

Sets the crop size to be the same as the size of "Crop|Region". This setting is especially useful when using VueScan to save the raw scan data to files as it ensures that all of what the

scanner reads will be saved.

(specific sizes)
Sets the crop area to known dimensions. If a specific size is selected, the "Crop|Landscape" option will be available.

Landscape
If set, the size specified in the "Crop size" option is oriented in the landscape direction (i.e. it's wider than it is tall).

This option is available when "Crop|Crop size" is set to a specific size.

X/Y size
This is the size in of the image area that you are cropping. If set to zero, the entire scanned area will be used.

X/Y images
Set these options to define the dimensions of a grid each of whose elements contains an image for VueScan to separately consider after performing scan.

Typically this will be just a 1x1 grid −− a single image, as in the case where you put a single photo on a flatbed scanner, or in the case that you scan a frame of film held in a film holder. These options are not used in this normal case.

These settings allow you to specify a grid of crop regions within a single scan region. The grid may have a single row, or multiple rows. Each crop region within the grid will be the same size, as specified by "Crop|X/Y spacing", described below.

There are several special cases where you may set values greater than one.

Film scanners that scan a whole strip or roll in a single pass
In this case, you will have multiple images along the length of film (X direction) and 1 image over the width of film (Y direction).

If a film strip doesn't crop correctly, try reducing this value to the exact number of images on the film strip. This may be necessary if you have tape on part of the negative strip.

Scanning strips of film on a flatbed scanner
In this case, you may have strips of film with a number of frames each, probably held in a transparency adapter. When placed on the scanner bed horizontally, X images is the number of frames in each strip. If you have more than one strip of film in rows Y images is the number of strips.

Scanning multiple mounted slides on a flatbed scanner
In this case, you can array slides in a grid X slides across, Y slides down. The number of X and Y correspond to your settings for X images and Y images.

Scanning multiple photos at once on a flatbed scanner
In this case, you may have multiple photos in both dimensions, for example, you could scan 8 4x6 photos on a 12x16 flatbed scanner with a single scan. In this case, you would lay the photos side−by−side in two rows of four photos in portrait orientation. For this example, X

images would be 4, and Y images would be 2.

Use this feature in conjunction with "Crop|X/Y spacing".

X/Y spacing

These values can be set when "Crop|X/Y images" is set to a value greater than 1. See "Crop|X/Y images".

Set the approximate width (X spacing) and height (Y spacing) of each element in the grid defined by "Crop|X/Y images". For example, 8 4x6 photos on a 12x16 flatbed scanner would have X spacing of 4 inches and Y spacing of 6 inches.

On 35mm film, frames are spaced 38mm apart; the width is 35mm, of course.

Mounted 35mm slides arrayed in a grid with edges touching are 50mm square.

Border (%)

This causes VueScan to enlarge the image beyond the edge of the crop box. This added border is ignored when computing the color balance of the image.

This option is useful to adjust for sizing or positioning errors of the crop box that incorrectly cut off parts of the image you want to keep. Because border will extend the effective area that is cropped, it will tend to include areas of white (or black) in the resulting image; if these parts of the image were not ignored when computing color balance, they could skew the results.

Border is a percentage relative to the dimensions of the cropped area, up to the maximum size of the scan region.

Border can also be set as a negative value in order to reduce the size of the image.

Compare this option to "Crop|Buffer (%)".

Buffer (%)

This causes VueScan to ignore some image data just inside the edge of the crop box of the image when computing the color balance of the image. Unlike "Crop|Border", the buffer does not affect the size of the image.

This option is useful to account for sizing or positioning errors of the crop box that incorrectly include parts of the image from its outer edges. These white or black areas can significantly skew the calculation of color balance if not ignored.

Buffer is a percentage relative to the dimensions of the image area. Because it includes a "Crop|Border" it should always be set slightly higher than Border.

Compare this option to "Crop|Border (%)".

Region

The scan region is the subset of the total scan area that gets scanned to produce a preview. This option can be set up so the region can be specified manually, so it can be the maximum possible size or so it can be the default region size for the device.

Note: if you set a smaller Region, the scanner head will move only far enough to cover that region which can reduce the amount of time needed to scan, especially on flatbed scanners. Because the stepper motor that moves the scan head is often the factor that limits speed, it also makes sense to orient images in landscape. (and set the Region accordingly).

Region X/Y offset/size

These options describe the size of the scan region. They are relative to the upper left−hand corner of the image, negative, or slide.

Note that you should be careful to not set the Scan y size to a value larger than 190.5 mm on the PhotoSmart scanners, since there have been reports of scratched film when scanning longer lengths than this.

Focus X/Y offset

This option determines where the auto focus is centered. This position is displayed on the preview as a small animated box.

Film tends to curl along its length, as well as across its width in which case the focus will be slightly off as the edges of the film will be closer to the lens than the center. To minimize this effect, position the focus point between the center of the film and its edge in both dimensions, or slightly closer to the edge to account for less depth−of−field the closer to the lens.

Filter tab

This tab is used to control the infrared (IR) cleaning, restore colors, grain reduction and sharpening options.

Filter options affect the output of cropped TIFF or JPEG files and the images in an index. They do not affect the data of a raw scan file.

The one exception to this is if "Files|Raw save with" is set to "Save" − in this case, the infrared cleaning and grain reduction is also done before saving the raw scan files.

See the Processing section of the topic "How VueScan Works" to understand the details of how these filters are applied.

Infrared clean

Use this option to remove dust spots and scratches. It's only available when an infrared channel is available. This option only causes image softening in the immediate vicinity of dust spots and scratches.

You can control the amount of cleaning of the image by choosing the Light, Medium or Heavy options.

Infrared defects

Use this option to show the defects found by the infrared clean option as red dots in the preview and scan tabs. These red dots aren't written to output files. This option is only available when an infrared channel is available and when infrared cleaning is enabled.

Restore colors

This option is used to restore the red, green, and blue colors by transforming the colors to make them more independent. This works best when scanning at high resolution.

If this option is used, the film type in the Color tab isn't used.

Restore fading

This option is used to restore the effects of film dyes fading over time. Slide film often shifts towards red over time, and color negative film fades towards cyan.

If this option is used, the film type in the Color tab isn't used.

Grain reduction

Use this option to reduce the graininess of a scan. This option can also reduce the effect of electronic noise inherent in the CCD technology.

You can control the amount of softening of the image by choosing the Light, Medium or Heavy options.

Sharpen

This option enables a 3x3 sharpening filter. It is sometimes useful to make images look better when printed.

If you're planning on editing images after scanning them, then you should leave this option off.

Color tab

This tab is used to control the colors of the preview and scan. It lets you specify film type, film base color, image brightness, color balancing, black and white points, image curve mapping, and color space.

Color balance

Use this option to set the type of color balance you want for each image. The default setting of White Balance is appropriate for typical lighting conditions. See the topic "Scanning Sunsets, Flowers and Unusual Lighting" for general guidance on using Neutral and Auto levels to handle these cases if White Balance is not right.

None

The black and white points aren't used at all, and the image is only corrected for the CCD's color response (if the Media type option is set to Image) or by the film's color response. This image will also appear dark because gamma is 1.0.

Neutral

Both the black and white points are used to stretch the image's intensity range. However, the relative ratios of red, green, and blue are kept constant.

Tungsten

Both the black and white points are adjusted to compensate for an image lit by tungsten light (i.e. a normal incandescent light bulb). This removes the reddish cast from indoor pictures taken without a flash.

Fluorescent

Both the black and white points are adjusted to compensate for an image lit by fluorescent light. This removes the greenish cast from indoor pictures lit by fluorescent lights or lit by flash.

Night

Both the black and white points are adjusted to compensate for an image taken at night. The white balance is determined from the darkest 10% of the image, which often produces the best results when images have bright fluorescent or incandescent lights that are greenish or yellowish.

White balance

VueScan analyzes the image and adjusts it to make the color balance look like the scene is lit by daylight.

Auto levels

This is a simple mapping of the darkest color to 0.00 intensity and the brightest color to 0.95 intensity.

Black point (%)

The black point is used by the color balance algorithm and is computed by using the histogram of each color in the image. Use this option to leave the black point at the minimum intensity (0%), or to choose the black point such that some percentage of the pixels in the image are below the black point.

The default black point is 0. Setting a higher value will cause tones close to black to become pure black, which can improve contrast. Setting the black point too high will cause shadow detail to be lost.

Black point red/green/blue

This option lets you set the black point manually. Note that these values are in linear space, not gamma corrected space, so the only practical way to use these values is to use the "Device|Lock image color" option.

White point (%)

The white point is used by the color balance algorithm and is computed by using the histogram of each color in the image. Use this option to leave the white point at the maximum intensity (0%), or to choose the white point such that some percentage of the pixels in the image are above the white point.

The default white point is 1% (that is, the brightest 1% of pixels are all converted to pure white). Setting a higher value will cause tones close to white to become pure white. This can improve contrast and overall intensity of the image. Setting the white point too high will cause details in areas of highlights (e.g. the gray puffs of a cloud) to be lost, making the image look flat.

White point red/green/blue

This option lets you set the white point manually. Note that these values are in linear space, not gamma corrected space, so the only practical way to use these values is to use the "Device|Lock image color" option.

Brightness

Use this option to increase or decrease the overall image brightness.

VueScan's brightness is effectively a multiplier of the gamma of the color space.

Brightness red/green/blue

Use these options to increase or decrease the red/green/blue image brightness. Note that this is a gamma multiplier, where 1.0 is the default setting.

Film base color red/green/blue

This option displays values for the base color of the film, and can be edited. These options are available if "Device|Lock film base color" is set and are usually set automatically.

This is primarily useful if you're scanning a series of negatives or slides from the same roll of film as it's base color will always be the same.

Slide/Negative/B/W vendor/brand/type

Use these options to set up the film type for various settings for the "Device|Media type" option.

Choose the appropriate vendor, brand and type from the list. Examine the edge of the film around the sprockets to determine type.

If your film is not listed, the generic option is often a good choice.

Image/Slide/Negative/B/W curve

Slide film captures a small range of scene intensities and negative film captures a very wide range of scene intensities. If the scanned image from slide film or negative film has too much contrast, use this

option to change the mapping of scene intensity to image intensity.

The settings of this option progressively lighten the image. The formula used to map intensity I to pixel P with gamma G is:

```
Gamma        P =       I  ^ 1.0/G
Log (dark)   P = log10(I) ^ 3.3/G
Log (medium) P = log10(I) ^ 2.2/G
Log (light)  P = log10(I) ^ 1.5/G
```

File/Monitor/Printer color space

Use these options to set the color space. A color space is a combination of color primaries and white point. For most situations, the default color space is probably best.

Color spaces are used to provide a well−known standard that ensures a given color is the same in one medium (e.g. the display monitor) as it is in others (e.g. printed output). If you use specific color spaces, you must ensure that all other software, printing, etc. that operates on that source uses the same color space. Color spaces are an advanced topic −− use them only if you understand and need them.

The Monitor color space is the color space used to display images in the Preview and Scan tabs. The File color space is used when writing images to JPEG, TIFF and Index files. The Printer color space is used when printing images.

Note that if you use the Apple RGB, ColorMatch RGB or ProPhoto RGB color space, the image gamma will be 1.8. If you use any other color space, the image gamma will be 2.2.

You can change the image gamma by using the "Color|Image brightness" option. This is a multiplier of the gamma of the color space chosen.

Monitor/Printer ICC profile

If you set "Color|Monitor/Printer color space" to "ICC profile", you can use these options to specify the name of an ICC profile.

Files tab

This tab lets you specify what types of files are written when scanning, and the file names and options for these files.

The various measures of the image files produced will be displayed in the status area at the bottom left of the VueScan window.

File naming and saving

The Files tab has several options to specify the name of the files VueScan produces. You may either type the filename in directly, or click the "@" button to open a visual file and folder navigation window.

You may specify a default folder for all file operations, but filenames may also specify the path to a sub−folder of the default (a relative path), or even a completely different location (an absolute path).

You may have VueScan save multiple files at once. For example, you may want to save a high−resolution TIFF for archiving purposes or later editing, and lower quality (and size) JPEG files for other purposes.

Auto−numbering

VueScan provides an auto−numbering feature that allows you to create unique filenames automatically. You can have VueScan use the next number in a series, or use the current frame number (as indicated in "Device|Frame number") when creating a new filename. Which you choose will depend on the task you are doing.

This option is available and works the same for "crop" files (scans that have been cropped and processed) in either TIFF or JPEG formats or "scan" files that contain the raw, minimally processed output from the scanner.

The convention used by VueScan is to name files in this pattern: ["crop"|"scan"]nnnn.xxx. For example, "crop0012.jpg" may be the 12th cropped and processed file saved in JPEG format. Any other naming convention you prefer may be substituted.

In cases where you are scanning film, you may find that it makes sense to have the numbered part of the filename match the frame number of the exposure being scanned (i.e. the frame number printed on the film edge). This approach can simplify archiving your film and scans.

Serial numbering with +

Insert a plus sign (+) anywhere in the filename in order to cause VueScan to add a number in that place if needed to create a new unique filename in the folder. If you put one or more digits before the plus sign, VueScan will start counting from that number.

VueScan finds the next available number by looking for files matching the pattern specified; one by one it adds one to the digit(s) in the name until it finds an unused filename. So if the pattern is "crop0001+.tif" and the folder is empty, the first file will be "crop0001.tif", the second "crop0002.tif" and so on. You can start at any number (e.g. "crop1001+.tif").

Note that if you delete a file from an existing numbered series, the next file saved will fill the open position. This can be useful if you want to match file numbers with exposure frame numbers or other numerical indexes.

Add leading digits to the starting number in order to "reserve" have filenames of the same length.

If more than one plus sign (or equals sign) is specified, VueScan will ignore all but the last.

Frame numbering with =

Insert an equals sign (=) anywhere in the filename in order to cause VueScan to insert the current value of "Device|Frame number" when creating the file. If you save the same frame more than once VueScan will overwrite the previous file (see "Prefs|Warn on overwrite").

If you specify a starting number, VueScan will add one less than the current frame number to the starting value. For example, if you specify "crop0007=.tif" and the current frame number is 2, the file written will be "crop0008.tif" (7+2−1).

This feature allows you to match the exposure number printed on the film edge to the file number of the scan. Keep in mind that "Device|Frame number" will be relative to what the scanner device thinks a frame is, so if you have a film holder frame number might range from 1 to 6. So for each new strip of 6 exposures you scan, you can set the starting number in filename.

Image units

Use this option to choose the units to use when displaying the image width and height. You can choose mm, cm or inch units.

This also affects the units displayed in the status area at the bottom of the VueScan window.

Image size

Use this option to select the target size of the saved images. This is used to compute the resolution of the saved TIFF and JPEG files. The dpi of the saved files will depend on the dpi produced by the scanner and the image size.

Note that image size does not affect the number of pixels in the image, so this setting does not affect the file size. Image size controls logically how far apart the pixels should be displayed in order to fit in the bounds specified. This also means that image size does not cause VueScan to resample the image.

Keep in mind that the effects of resolution may not be visible or may be misrepresented as a result of the resolution of your monitor or printer. A very high resolution file cannot be displayed at a resolution higher then the monitor, so just because you see jagged lines does not mean the image will print poorly.

If a specific image size is specified, "File|Lock aspect ratio" will be available.

Image dpi

If the Image size is "Fixed dpi", you can specify the dpi of the output file with this option. The image size will be as large as needed to match the specified resolution and will retain the aspect ratio of the cropped scan.

Image width

This sets the target width of the saved images when the image size option is set to "Manual". If set, the height will be calculated to retain the aspect ratio of the cropped scan.

Image height

This sets the target height of the saved images when the image size option is set to "Manual". If set, the width will be calculated to retain the aspect ratio of the cropped scan.

Lock aspect ratio

This option forces the crop box to have the same aspect ratio as the image size. If this option isn't set, the dpi of the saved images are set to fit the image within the image size using the aspect ratio of the cropped scan.

Save TIFF file

This enables writing the cropped and processed images to a TIFF file when scanning.

TIFF file name

This specifies the name of the TIFF file to hold the cropped and processed images.

In addition to having VueScan write a specific file name, you can also have it automatically number your files in two ways by placing special characters in the filename. See the beginning of this section for information on how to use this auto−numbering feature.

The default setting of this option is "crop0001+.tif".

TIFF size reduction

You can use this option to write files with a reduced number of pixels. For instance, if size reduction is set to 3, then every 3x3 block of pixels in the image will be written as a single pixel, which is the average of these 9 pixels.

This option will reduce the resolution and size of the file produced. These values will be displayed in the status area at the bottom of the VueScan window.

However, this option produces better results than reducing the resolution of the scan, as the averaging of multiple pixels results in a similar noise reduction benefit as multi−sampling. See "Device|Number of samples" and "Device|Number of passes".

TIFF multi page

If set, this option will cause VueScan to create multi−page TIFF files. Each scan will be added as a new page.

Make sure "Device|TIFF file name" does not include the plus sign (+) or else VueScan will create a new file for each new scan.

This option is useful when you are scanning documents and want all pages stored in a single file.

TIFF file type

This option describes the resolution of the cropped TIFF file, in bits per pixel. It should normally be set to 24−bits per pixel, since many image editing programs are unable to read TIFF files with higher bit depth than this.

If you select 8 bits or 16 bits, the file will be saved in black/white format.

TIFF compression

This specifies whether to use compression when writing the TIFF file.

TIFF compression will not cause any loss of image data. It will take a little longer to read and write (especially write) as the algorithm is computationally intensive, but can reduce total file size by as much as 40%.

TIFF profile

This specifies whether to embed an ICC color profile into the TIFF file. This is primarily useful if you're using Photoshop(TM). You can specify the profile to use by setting "Color|File color space".

Save JPEG file

This enables writing the cropped and processed images to a JPEG file when scanning.

JPEG file name

This specifies the name of the JPEG file to hold the cropped and processed images.

In addition to having VueScan write a specific file name, you can also have it automatically number your files in two ways by placing special characters in the filename. See the beginning of this section for information on how to use this auto−numbering feature.

The default setting of this option is "crop0001+.jpg".

JPEG size reduction

You can use this option to write files with a reduced number of pixels. For instance, if size reduction is set to 3, then every 3x3 block of pixels in the image will be written as a single pixel, which is the average of these 9 pixels.

This option will reduce the resolution and size of the file produced. These values will be displayed in the status area at the bottom of the VueScan window.

However, this option produces better results than reducing the resolution of the scan, as the averaging of multiple pixels results in a similar noise reduction benefit as multi−sampling. See "Device|Number of samples" and "Device|Number of passes".

JPEG quality

This option controls the quality of the JPEG file. Using 100 produces images with few visible JPEG artifacts, and 50 results in images with noticeable artifacts, but with much smaller sizes. The default value of 90 produces fairly small images with little visible degradation in image quality.

Even at the highest quality, JPEG files are smaller than compressed TIFF files (as much as 60% smaller). This smaller size comes at the cost of loss of image information. If you expect to be editing the scans produced by VueScan (e.g. in Photoshop(TM)), or are digitally archiving your scans, JPEG is not a good choice. However for web, small size or inkjet printing, or email, JPEG is by far more efficient and at higher quality settings virtually indistinguishable.

JPEG black/white

This enables writing the cropped and processed images to a monochrome JPEG file. If you're working with black/white film, this will produce files that are smaller than color files.

JPEG profile

This specifies whether to embed an ICC color profile into the JPEG file. This is primarily useful if you're using Photoshop(TM). You can specify the profile to use by setting "Color|File color space".

Save index file

This enables writing the cropped and processed images to an index file when scanning.

An index file contains thumbnail size copies of a set of images, for example a roll of film. Each cropped image is added to the index print from left to right, top to bottom.

After saving an image to the index file, the file is closed and opened again if another image will be added.

Index file name

This specifies the name of the file to hold the index images. Index files are always saved as windows bitmap (BMP) files.

Index frame

This option controls the placement of images in the index. If zero, the images are added from left to right, top to bottom; this is the default setting.

If a number greater than 0, the images are added at that frame position counting left to right, top to bottom. For example, if Index frame is set to 8 and Index across is set to 5, the image would be placed at the second row, third column.

If Index frame is set to a number greater than 0, it will be increased by 1 after an image is saved to the index.

This option is useful when you want to replace one or more index images in an existing index file. For example if you want to change the rotation of an image, or if you re−scan one strip of film within a roll.

Index width

This is the width of an index frame, in pixels.

Index height

This is the height of an index frame, in pixels.

Index margin

This is the margin around an index frame, in pixels.

Index across

This is the number of index frames across in an index file.

Save raw file

This enables writing raw data from the scanner to a TIFF file.

The raw files are the result of the first of two steps VueScan performs: "scanning". The second step is "processing". These steps are described in the topic "How VueScan Works" in this User's Guide. By providing a mechanism to cleanly separate these two steps, VueScan provides great flexibility and options not available in most scanner software.

You can perform the "processing" step later by setting "Device|Scan from" to "Disk". This lets you rescan images with different settings, without needing to physically rescan the media.

When the raw file is written depends on the setting of "File|Save raw with".

Raw files are always stored as TIFF files and can therefore be examined in image viewing and editing programs. Note, however that the resolution of raw files (as specified in "Files|Raw file type") may be greater than some programs can read.

Little processing is done on raw files so they are a close representation of exactly what the scanner has produced. Raw files will not be filtered nor will color settings be applied. As a result, raw scans may look "wrong".

Raw files are good for archiving as they contain as much data as the scanner was able to produce without any operations that modify the scanner data.

The image gamma value is 1.0 when there are two bytes (16−bits) per sample, and 2.2 when there is one byte (8−bits) per sample. Raw files saved with gamma 1.0 will look dark, but this is normal.

The one exception to this is if "Files|Raw save with" is set to "Save" − in this case, the infrared cleaning and grain reduction is also done before saving the raw scan files.

Raw file name

This specifies the name of the TIFF file used to hold the raw data from the scanner.

In addition to having VueScan write a specific file name, you can also have it automatically number your files in two ways by placing special characters in the filename. See the beginning of this section for information on how to use this auto−numbering feature.

The default setting of this option is "scan0001+.tif".

Raw size reduction

You can use this option to write files with a reduced number of pixels. For instance, if size reduction is set to 3, then every 3x3 block of pixels in the image will be written as a single pixel, which is the average of these 9 pixels.

However, this option produces better results than reducing the resolution of the scan, as the averaging of multiple pixels results in a similar noise reduction benefit as multi−sampling. See "Device|Number of samples" and "Device|Number of passes".

This option may not be appropriate for use with raw files when your purpose is to archive the scanner's output. For most users leave the value set at the default of 1 (no reduction).

If, however, you always scan at a high resolution and then use size TIFF/JPEG reduction when saving the crop file, Raw size reduction may be appropriate because it results in significantly smaller files while still gaining the benefit of scanner noise reduction.

If you do use Raw size reduction, you probably will not want to use TIFF/JPEG size reduction later when scanning the raw file from disk.

Raw file type

This option describes the resolution of the raw file, in bits per pixel. It should normally be set to Auto, which defaults to bits per pixel of the scanner.

Raw save with

This specifies which operations in VueScan cause the raw scan data to be written to a file.

If set to "Scan" (or "Preview"), the raw file is written at the same time as the scan (or preview). In this case, the raw file has not had infrared cleaning or grain reduction applied.

Assuming that the preview is used primarily to prepare for the final scan, this option should normally be set to "Scan" so that the highest resolution raw image can be saved.

If set to "Save", it's written at the same time as other files are written (i.e. after a scan completes or when the Save button is pressed). In this case, the raw file has had infrared cleaning and grain reduction applied.

It's much faster to save the raw file at the same time as the scan, since writing the file is overlapped with scanning the data.

Raw compression

This specifies whether to use compression when writing the raw file.

Compression of the raw TIFF file will not cause any loss of image data. It will take a little longer to read and write (especially write) as the algorithm is computationally intensive, but can reduce total file size by as much as 40%.

Default folder

This is the folder where files are read and written by default.

All other file names on the Files tab, as well as "Device|Disk file name" will use this folder, so full paths are not required in those fields.

Output log file

If enabled, VueScan will log all data sent and received from the scanners to vuescan.log. This is primarily for debugging problems with scanners, and you should only use this feature if you want to send it with a bug report when a scanner isn't working right and you suspect a problem with the way VueScan is controlling the scanner.

Prefs tab

This tab lets you set preferences that control the behavior of VueScan.

Refresh delay

VueScan is capable of detecting changes to options that affect the preview or scan display. You can use this option to lengthen or shorten the delay between changing an option and the display being refreshed.

This delay is in seconds. The default value is 1.0 seconds.

If set to zero, the preview and scan won't be automatically refreshed when you change options. In this case, you can refresh the preview and scan by using the "Image|Refresh" command.

Refresh fast

VueScan normally refreshes the display in two steps − once to give a fast overview of the image and then once again at full resolution. Use this option to control the initial fast refresh of the display.

Refresh each scan

If set, the display will be refreshed at the completion of each scan. The option is set by default.

If you turn this option off, the display will be refreshed after the last frame in a batch is scanner, which can speed up batch scanning a bit.

Refresh image type

Use this option to display images from RGB color channels merged, or to display either red, green, blue or infrared channel alone.

The default value is "RGB".

External viewer

If this option is set, cropped and processed images will be displayed using the viewer specified in the "Viewer" option.

Viewer

If the "External viewer" option is enabled, the specified program will be started with each cropped image upon completion of a scan.

The default value is "default".

On Windows, if the viewer name is "default", the file association for this type of file will be used. You can also put command−line options after the name of the viewer (e.g. "vuepro32 /fillwindow" to display images without a window frame with VuePrint). If the name of the viewer has "%1" after it (e.g. vuepro32 "%1"), the file name will be substituted at that point. If you use the %1 argument on the command line, be sure to put double−quotes around it, or file names that have embedded spaces won't work.

On Linux, the viewer name can have command−line options after it, and the file name will be appended to the end of the command−line before it's run.

On Mac OS 9/X, if the viewer name is "default", the files will start in the same application that would start if you double−click on the files.

On Mac OS 9, the file type and file creator for the TIFF, JPEG, and BMP files are determined by the settings in the "File Exchange" control panel.

On Mac OS X, you can set up the default viewer for a type of file by clicking on an image, choosing "File|Show info", choosing "Open with application", selecting an application, and then choosing "Change all".

Window x/y offset/size

Use these options to set the VueScan window position and size. These options are updated automatically when you move or resize the window.

Font size (pt)

Use this option to set the font size used in VueScan. The font size is specified in points, which are basically the same as pixels on most systems.

The default value is 8 points.

Note that the display will jump when you change this option.

Option panel width

Use this option to set the width in pixels of the panel containing the VueScan options.

The default value is 330 pixels.

Note that the display will jump when you change this option.

Histogram type

Use this option to specify whether the Y axis of histograms is the number of samples (linear), the square root of the number of samples or the logarithm of the number of samples. The default is "Linear"

Animate crop box

This option controls whether the crop box in the Preview is animated. It's easier to see when animated, but also can be a bit distracting. The option is set by default.

Add extensions

This option controls whether the TIFF, JPEG, and Index file names automatically have a ".tif", ".jpg", or ".bmp" extension added to the file name. This reduces the amount of typing needed when manually setting the saved file names. No file extension will be added if the file name has a period in it. This option is set by default.

Warn on overwrite

When enabled, VueScan will display a warning message before overwriting a TIFF or JPEG file, and allow you to prevent the file from being overwritten. This option is set by default.

Beep when done

Enabling this option causes a sound to be played on the computer's speakers when scanning completes. This is sometimes useful to alert you to the end of a long− running scan. On Windows, this is the "Default sound" in the "Sounds and Multimedia" control panel. On Linux, this is a simple beep. This isn't yet implemented on the Macintosh.

This option is not set by default.

Watermark

You can optionally add a watermark (grid of lines) to saved files by selecting this option. This option is not set by default.

The unregistered version of VueScan always applies a watermark.

Release memory

If this option is set, VueScan will release the memory buffer for the scan at the end of each scan. This is useful if you're post−processing images with an image editor and you need to free some memory.

Memory can also be released manually from the option in the File menu.

Disk files only

If this option is set when VueScan starts, no scanners will be accessed. It is set by default.

This is useful if you want to run multiple copies of VueScan at the same time, scanning with one copy and processing raw disk files with another copy. To use this option, put copies of VueScan in different directories, run VueScan, set this checkbox, then exit and restart VueScan.

Enable sliders/spin buttons

You can use this option to remove the slider and spin button controls. This is sometimes useful if you want the option panel to be quite small to maximize the image display area. This option is set by default.

Preview/Scan mem (MB)

Use this option to set the maximum amount of memory that VueScan will use to hold all the previews or scans in memory.

If "Device|Preview resolution" is set to "Auto", then each preview needs about one million pixels, and if "Device|Scan resolution" is set to "Auto", each scan needs about four million pixels. Each pixel either needs three bytes (24−bit RGB), six bytes (48−bit RGB) or eight bytes (64 bit RGBI) depending on the setting of "Device|Bits per pixel".

The default value for this option lets you keep six preview frames in memory (for most scanners) and one or two full−resolution scans in memory.

Display res (Mpix)

Use this option to set the resolution of the displayed image (in millions of pixels). The default value of 2 million pixels is usually enough for most purposes, but sometimes it's useful to increase this value when zooming into the image.